UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/007,191	11/08/2001	Daniel M. Dreps	AUS920010742US1	3560

7590 03/28/2005

Kelly K. Kordzik
5400 Renaissance Tower
1201 Elm Street
Dallas, TX 75270

EXAMINER	
WANG, TED M	

ART UNIT	PAPER NUMBER
2634	

DATE MAILED: 03/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/007,191	DREPS ET AL.	
	Examiner	Art Unit	
	Ted M Wang	2634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 November 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) *1,and 5-14* is/are rejected.

7)☒ Claim(s) *2-4* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 November 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claims 1-7 are objected to because of the following informalities:

- In claim 1, line 8, insert – first -- before "terminating".
- In claim 2, line 7, delete "a" before "generating", line 8, insert – is – before "a".
- In claim 4, line 3, the value of "N" has not been defined in the claim.
- In claim 5, line 2, the value of "M" has not been defined in the claim.
- In claim 6, line 1, the value of "N" has not been defined in the claim.
- In claim 7, line 13, insert – and – before " said programming" and insert -- , -- before "generating".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 8-10, 12, and 14 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

- With claim 8, the limitation of "setting said first terminating voltage at an optimized level corresponding to said quality of said received data signal" as recited has not

been taught in the specification. The specification only teaches "monitoring an output of said differential receiver for a quality of a received data signal" as recited.

- With claims 12 and 14, the limitation of "circuitry for coupling said second output and said third output to said reference voltage, wherein said reference voltage is modulated by a selected frequency content of said clock signal and said complement clock signal" as recited has not been taught in the specification. The specification only teaches "the outputs of TN 123 and 124 are coupled to a filter network (FN) 125 which generates reference output 110" as recited.

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 6 recites the limitation "said voltage divider networks" in line 2 has not been introduced previously. There is insufficient antecedent basis for this limitation in the claim.

6. Claims 11 and 12 recite the limitation "said I/O adapter" in line 11 has not been introduced previously. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

8. Claims 1, 5, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (US 6,105,157) in view of Blood (US 3,993,867).

- With regard claim 1, Miller discloses a digital signal transmission system comprising:

  a first driver circuit (Fig.1 element 26) receiving a first data input signal (Fig.1 element 26 input) and generating a first driver output signal (Fig.1 element 26 output) in response to a clock signal (Fig.1 elements 28 input and output and 26 control signal TRI-STATE, and column 6 lines 1-31), said first driver output coupled to a first input of a first transmission line (Fig.1 element 16A);

  a receiver circuit (Fig.1 element 12 and column 1 lines 50-63) having a first receiver input (Fig.1 element 20 and column 1 lines 50-63) coupled to a first output of said first transmission line (Fig.1 element 16A); and

  a first terminating network (Fig.1 element 24A) receiving programming signals (Fig.1 element 24A center input) and generating a terminating voltage with a first source impedance at a first node (Fig.1 element 24A up connection), wherein said terminating voltage is modified in response to said programming signals while controlling the magnitude of said first source impedance (Fig.14 element 130, column 11 lines 10-27, and column 12 lines 64-67).

  Miller discloses all of the subject matter as described in the above paragraph except for specifically teaching

  a) a second receiver input coupled to a reference voltage, and

  b) said first node coupled to said first output of said first transmission line.

- With regard a), Blood teaches a second receiver input coupled to a reference voltage (Figs.2 and 4 element Y, column 2 lines 53-68, column 3 lines 58-68, and column 6 lines 3-24).

It is desirable to include a second receiver input coupled to a reference voltage in order to reduce the noise susceptibility of the system (column 3 lines 58-68).

- With regard b) Blood further teaches said first node coupled to said first output of said first transmission line (Fig.2 element R_L and column 3 lines 16-34).

It is desirable to include a first node coupled to said first output of said first transmission line in order to reduce the signal reflection in the transmission line.

Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the receiver circuit as taught by Blood to replace Miller's receiver so as to reduce the noise susceptibility of the system, and to place the programmable termination network at the output of the transmission line so as to reduce the signal reflection in the transmission line.

- With regard claim 5, all limitation is contained in claim 1, where the examiner is considering M=1. The explanation of all the limitation is already addressed in the above paragraph.
- With regard claim 13, which is a system claim related to claim 1, all limitation is contained in claim 1. The explanation of all the limitation is already addressed in the above paragraph.

9. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Miller (US 6,105,157) and Blood (US 3,993,867) as applied to claim 1 above, and further in view of Cao et al. (US 5,761,246) and Gustavson et al. (US 6,442,644)

- With regard claim 7, Miller and Blood disclose all of the subject matter as described in the above paragraph except for specifically teaching

  (a) a driver, a termination network and a differential receiver can be implemented in a integrated circuit (IC), respectively.

  (b) a reference network receiving a first clock transmitted from said first IC with a second transmission line, a second clock transmitted from said first IC with a third transmission line.

  With regard a), Cao et al. teaches that a driver circuit is implemented in a first chip (Fig.1 element 101, column 3-27), and a differential receiver is implemented in a second chip (Fig.1 element 101, column 3-59). It is inherent that the programmable resistive termination network can be implemented within chip 2 or integrated circuit 2, IC 2.

  It is desirable to implement the driver, receiver and termination network in a chip, respectively in order to reduce the system cost.

  Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the system as taught by Cao et al. in which, implementing the driver, receiver and termination network in a chip, respectively, into Miller and Bloods' digital transmission system so as to reduce the system cost.

  Miller and Blood and Cao et al. disclose all of the subject matter as described in the above paragraph except for specifically teaching (b) a reference network receiving a first clock transmitted from said first IC with a second transmission line, a second clock transmitted from said first IC with a third transmission line.

With regard b), Gustavson et al. teaches that a reference network receiving a first clock (Fig.1A element DCLK1_B and DCLK1_B) transmitted from said first IC (Fig.1A element 150) with a second transmission line (Fig.1A elements 156b and column 11 lines 1-7), a second clock (Fig.1A element DCLK1_B#) transmitted from said first IC with a third transmission line (Fig.1A elements 156c and column 11 lines 1-7).

It is desirable to have a reference network receiving a first clock transmitted from said first IC with a second transmission line, a second clock transmitted from said first IC with a third transmission line in order to improve the transmission characteristics (column 11 lines 13-32). Therefore, It would have been obvious to one of ordinary skill in the art at the time of the invention was made to include the system as taught by Gustavson et al. in which, including a reference network receiving a first clock transmitted from said first IC with a second transmission line, a second clock transmitted from said first IC with a third transmission line, into Miller and Blood and Gustavsons' digital transmission system so as to reduce the system cost.

Allowable Subject Matter

10. Claims 2-4 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims and rewritten to overcome the objection(s) set forth in this Office action.

Conclusion

11. Reference(s) US 5,726,583 and US 6,642,740 are cited because they are put pertinent to the programmable dynamic line-termination circuit and CPU operation with bus connection of subsystem (RAM). However, none of references teach detailed connection as recited in claim.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ted M. Wang whose telephone number is 571-272-3053. The examiner can normally be reached on M-F, 7:30 AM to 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 571-272-3056. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ted M Wang
Examiner
Art Unit 2634

Ted M. Wang

SHUWANG LIU
PRIMARY EXAMINER